

UNCLASSIFIED

Life-Cycle Mission Data Plan (LMDP) Guidebook and Templates

Version 3.1, 8 April 2014



OPR: Intelligence Mission Data Center (IMDC)

JWICS: IMDC_LMDP_support@dodiis.ic.gov

SIPRNet: IMDC_LMDP_support@dia.smil.mil

Unclass: IMDC_LMDP_support@dodiis.mil

UNCLASSIFIED
DOCUMENT CHANGE RECORD

Version Number	Description	Date
1.0	Initial version issued in response to DoDD 5250.01, "Management of Intelligence Mission Data (IMD) in DoD Acquisition," 22 January 2013	22 Jan 2013
2.0	Revised version issued based on recommendations from IC community's review of version 1.0 and NAVSEA STILO Technical Exchange Meeting	25 Apr 2013
3.0	Revised version issued based on recommendations from IC community's review of version 2.0	16 Sep 2013
3.1	Revised version with updated graphics.	8 April 2014

REVISIONS: Changes to this document will be coordinated by the IMDC. Any suggested revisions shall be provided to the IMDC.

Table of Contents

Reference Documents	4
1.0 Introduction	5
2.0 LMDP Development and Implementation	5
3.0 Roles and Responsibilities for LMDP Production	9
4.0 LMDP Drafting Support Files	12
Attachment 1: LMDP Template	13
Appendix 1: LMDP Special Cases	14
Appendix 2: Glossary	16
Appendix 3: Acronyms.....	22

List Of Figures

Figure 1. LMDP Process Flow.....	6
Figure 2. System of Systems Approach	7
Figure 3. LMDP Risk Assessment process.....	8

Reference Documents

1. DoD Directive 5250.01, Management of Intelligence Mission Data (IMD) in DoD Acquisition, 22 Jan 2013.
2. DoD Instruction 5000.02, Operation of the Defense Acquisition System, 02 Dec 2008 (Enclosure 4, Table 3).
3. Defense Acquisition Guidebook, Paragraph 8.2., 10 Jan 2012.
4. Intelligence Mission Data Cost Methodology Guidebook, 22 Jan 2013.
5. CJCSI 3210.03C, Joint Electronic Warfare (EW) Policy, 17 Sep 2008.
6. CJCSI 3210.04, Joint EW Reprogramming Policy, 10 February 2011.
7. DoD Directive 3222.04, Electronic Warfare (EW) Policy, 2013.
8. CJCSI 3901.01D, Requirements For Geospatial Information and Services, 29 March 2013
9. DoDI 5000.56, Programming Geospatial-Intelligence (GEOINT), Geospatial Information and Services (GI&S), and Geodesy Requirements for Developing Systems, 09 July 2010.
10. CJCSI 6212.01F, NET-Ready Key Performance Parameters (KPPs), 28 February 2011.

NOTE: This document replaces the *Life-Cycle Signature Support Plan (LSSP) Instructions and Templates*, dated 12 October 2011 and prior versions. Effective 22 January 2013, the LMDP replaced the LSSP. References to LSSP are in the process of being changed to LMDP, and shall be interpreted to mean LMDP. DoDD 5250.01 has been revised to change the scope from “signature support” to “intelligence mission data (IMD) support.” IMD includes the following functional areas as a minimum: Characteristics and Performance Data (Foreign Systems) (C&P), Electronic Warfare Integrated Reprogramming (EWIR), Geospatial Intelligence (GEOINT), Order of Battle (OOB), and Signatures. All IMD-dependent acquisition programs and efforts shall now submit LMDPs instead of LSSPs.

1.0 Introduction

U.S. weapon systems are increasingly reliant on Intelligence Mission Data¹ (IMD) to meet expected capability. As technology initiatives and weapons systems develop, their associated IMD requirements evolve, pressing the intelligence community to repeatedly respond to the changes. Data sharing among programs and capabilities thus becomes critical. A primary objective of DoDD 5250.01 is to facilitate sharing of IMD among the services and agencies, leading to cost savings, streamlined schedules, and improved capabilities. The Life-Cycle Mission Data Plan (LMDP) is the key instrument for exposing IMD commonalities and facilitating cross-program sharing. Additionally, LMDPs will facilitate the Intelligence Certification Process² relative to IMD.

The new DoDD 5250.01, signed 22 January 2013, assigns responsibility to the Director, Defense Intelligence Agency, to establish an Intelligence Mission Data Center (IMDC) to serve as the focal point of IMD development, production, and sharing. DoDD 5250.01 also requires that the Program Office for each IMD-dependent acquisition program establish an LMDP, through the system's acquisition life-cycle, beginning prior to Milestone A.

2.0 LMDP Development and Implementation

Development of an LMDP is a collaborative effort between the Service, Acquisition Intelligence Support, Program Office (PO), the Intelligence Mission Data Center (IMDC), and IMD producers, all of which have inputs to the LMDP. The LMDP defines specific IMD requirements for a program, and becomes more detailed as the system progresses toward IOC. For each requirement, the Program Manager (PM) should provide as much clarification as possible to explain the need and type of IMD necessary for the system to perform as designed. In addition, the PM should enhance specificity as the program advances through each milestone, taking into account team feedback and lessons learned. Examples of descriptive language, along with questions to consider and actions to take, are documented in the Defense Acquisition Guidebook (DAG), paragraphs 8.2.3.1 through 8.2.3.4. [<http://at.dod.mil/docs/DefenseAcquisitionGuidebook.pdf>].

2.1 IMD Dependency Determination

LMDPs are only required for IMD-dependent programs. Programs should first determine if this is the case. IMD Dependency Determination is the process of determining whether intelligence mission data is required for an acquisition program to execute its mission. This determination is made by the PO, with assistance from the supporting acquisition intelligence office and IMDC as required. IMD employment creates the dependency on the Intelligence Community (IC) to produce the appropriate mission data. The criteria to determine IMD dependency is an evaluation of a system using but not limited to characteristics and performance (C&P), electronic warfare

¹ Intelligence Mission Data is defined as: Intelligence Mission Data (IMD) provides essential data for building system models, developing algorithms, optimizing sensor design, system testing and evaluation, and validating sensor functionality." Programs dependent on IMD to satisfy their operational and system requirements are considered 'IMD dependent.

² See Intelligence Certification Process in the Glossary

integrated reprogramming (EWIR), geo-spatial intelligence (GEOINT), order of battle (OOB), and signatures within its software and hardware to provide the capability to detect and identify friendly, neutral, commercial and adversary characteristics for combat identification, ISR, and targeting or uses GEOINT for navigation, targeting, visualization or situational awareness.

2.2 LMDP Process Flow

The graph in Figure 1. depicts the durable LMDP process flow.

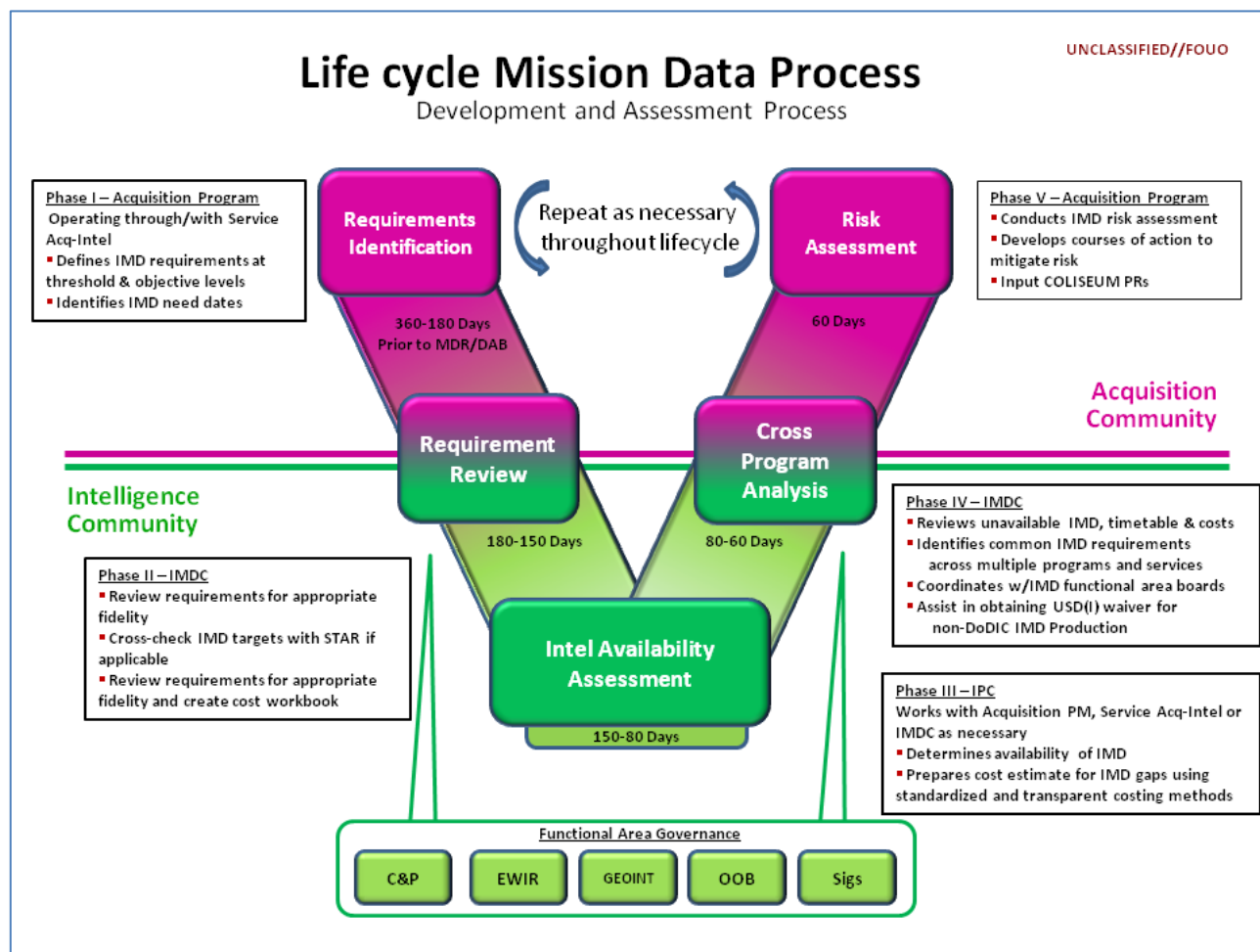


Figure 1. LMDP Process Flow

The Program Manager/Capabilities Manager (PM/CM) or pre-program lead, in conjunction with the service acquisition intelligence support personnel, drafts the initial LMDP to include overall requirements through full operational capability (FOC). The PM/CM may desire to consult with the IPCs during step 1 of the LMDP process.

The LMDP and associated system description is provided to the IMDC for initial review. The IMDC, in conjunction with the FIO/STILO, tasks the appropriate intelligence production centers via COLISEUM and NGA through existing GEOINT requirements processes, for Available, Potentially Available, or Unobtainable IMD. The IPC will also prepare a cost estimate for obtaining Potentially Available IMD. Then the IPC inserts the requirements assessment and cost information into the

LMDP and sends it to the IMDC. The IMDC validates and returns the LMDP to the acquisition program (function, e.g., pre-MS-A) for their risk assessment and respective COA Development. Programs should identify IMD requirements for the entire program life-cycle, not just for operational or developmental testing (OT/DT).

2.3 LMDP Submissions for System of Systems (SoS)/Family of Systems (FoS) Programs:

Per DoDD 5250, an LMDP will be submitted for each IMD-dependent acquisition program. SoS and FoS programs must submit an “umbrella” LMDP identifying IMD-dependent sub-systems. Each IMD dependent sub-system will also need an LMDP to identify its specific IMD requirements. Although it is understood that IMD sources may arise from both Commercial Off-the-Shelf (COTS) products and legacy Programs of Record (PORs), these conditions do not absolve the requirement for the person developing the LMDP. It is necessary to capture IMD *requirements* for enterprise analysis. If there are any questions, see the criteria for LMDP dependency.

PM/CM/Leads and PEOs/FIO/STILO/AIS for SoS/FoS programs must be aware of IMD requirements and will assist in ensuring that the associate programs comply with DoDD 5250.01 and DoDI 5000.02.

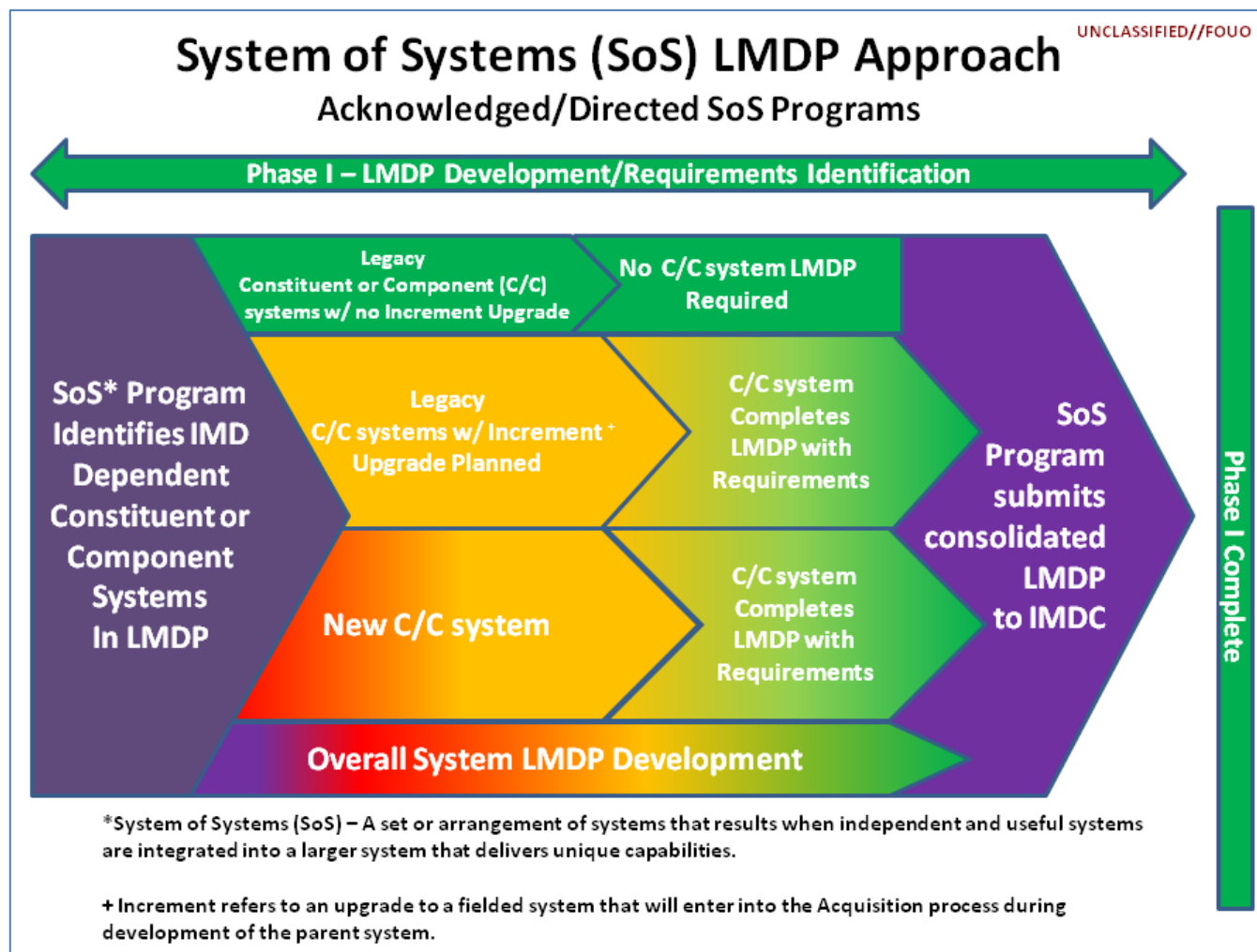


Figure 2. System of Systems Approach

2.4 LMDP Risk Assessment Process

Figure 3. below describes the LMDP Risk Assessment process. The LMDP includes:

- Threshold and Objective Requirements (Step 1)
- IC Assessments and Cost Estimates (Step 2)
- Risk Assessment and COA Development (Step 3)
- Final Approval and Dissemination (Step 4)

The LMDP evolves along with the program requirements.

Therefore, the LMDP development/maintenance is an iterative process, requiring frequent updates to reflect current IMD development. The LMDP is complete when all four steps in Figure 2 have been accomplished.

LMDPs should be written as soon as program IMD requirements are identified. In order to have the LMDP and associated risk assessment completed prior to the Defense Acquisition Board (DAB)/Joint Requirements Oversight Council (JROC) review, the LMDP must be started at least 1 year to 180 days out from the DAB or MDR [Milestone (MS) A, B, C and/or Full Rate Production-Decision Review (FRP-DR)], as applicable (see Fig 1). The IMDC will assist the program in drafting the initial LMDP sufficiently early in the program timeline to allow for risk assessment (Each service's timelines may differ.³) Draft versions of the LMDP shall be coordinated with the IMDC throughout LMDP development. Once an LMDP assessment is complete, the IMDC will send the updated LMDP to the acquisition program function to facilitate Steps 3 and 4 as indicated.

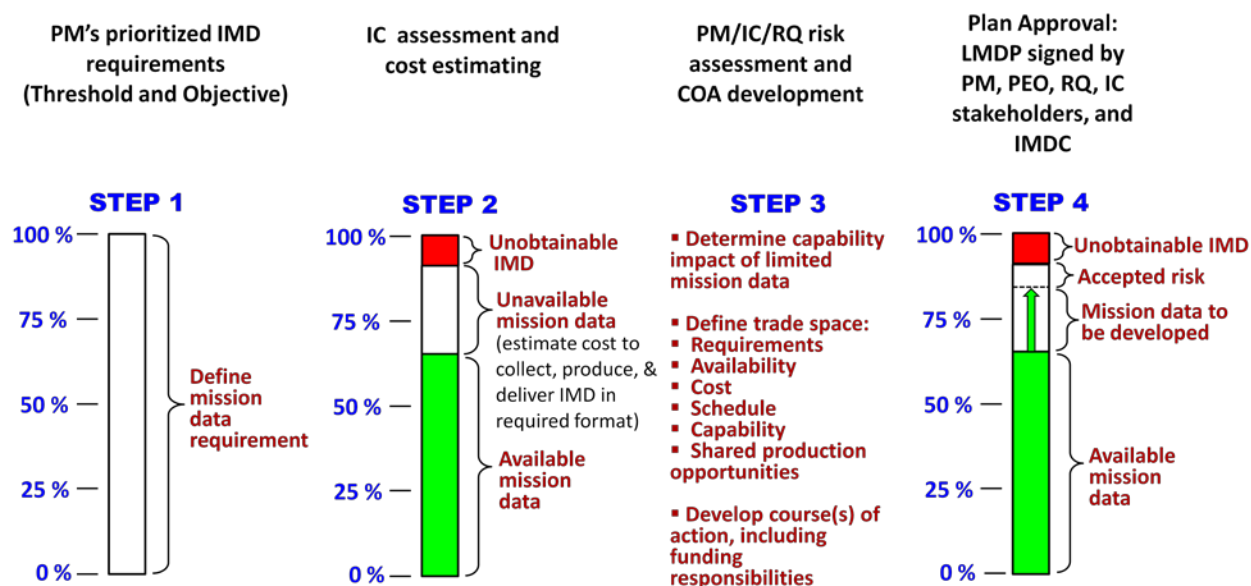


Figure 3. LMDP Risk Assessment Process

³ OUSD/AT&L memo dated 23 Jun 2011 subject "Improving Milestone Process Effectiveness" requires some plans to be submitted during the Pre-EMD review which typically takes place months before the Milestone B decision. Additionally, Air Force programs with AT&L as the MDA are required to submit required milestone documentation 90 days prior to the decision briefing.

2.5 LMDP Milestone Updates

The LMDP remains durable across all milestones. Successive requirements updates are added, as they are developed, to the base LMDP to maintain its currency.

2.6 Non-DODIC IMD Production Waiver Request

DoDD 5250.01 requires all IMD to be produced by DoD Intelligence Components (DODIC) unless a waiver is approved allowing IMD production by other sources. See “Non-DODIC IMD Production Waiver Request” attachment for further details.

3.0 Roles and Responsibilities for LMDP Production

The LMDP is accomplished by the interaction of at least four entities:

- The Program Office (or program function)
 - Assigned Acquisition Intelligence personnel, Foreign Intelligence Officer (FIO), Scientific and Technical Intelligence Liaison Officer (STILO), and Acquisition Intelligence Specialist (AIS)/Analyst (*if available*)
- The Intelligence Mission Data Center (IMDC)
- The Intelligence Production Centers (IPC)
- The IMD Functional Area Office (IFAO) (e.g., a respective governance structures for C&P, EWIR, GEOINT, OOB and Signatures)

3.1 The Program Office (PO)

- a. LMDP Requirements Definition:** The PM/CM (or pre-program lead) initiates the LMDP, in conjunction with FIOS/STILOs/AIS, by using the LMDP template and focusing on defining IMD requirements at both the threshold⁴ and objective⁵ levels. This IMD Requirements Listing shall identify all known IMD types required by the program throughout its lifecycle as well as format, frequency, dissemination standards and in the case of GEOINT, area requirements.⁶ The Initial Capabilities Document (ICD) for each IMD-dependent program should include language specifying that IMD issues be addressed by the program. These IMD needs may be defined by projections from sources such as contract parameters, Key Performance Parameters (KPPs), Key System Attributes (KSAs), design needs (System Engineering Plan), testing requirements (Test and Evaluation Master Plan), Joint Urgent Operational Need (JUONS), Joint Emergent Operational Needs (JEONS), applicable Joint Capabilities and Integration Development System (JCIDS) documents, System Threat

⁴ **Threshold value** - A minimum acceptable operational value below which the utility of the system becomes questionable.

⁵ **Objective value** - The desired operational goal associated with a performance attribute beyond which any gain in utility does not warrant additional expenditure. The objective value is an operationally significant increment above the threshold. An objective value may be the same as the threshold when an operationally significant increment above the threshold is not significant or useful.

⁶ **Special Access Programs (SAP)** - Acquisition Programs that are SAP should be coordinated at the appropriate level via a Special Access Request (SAR) to the appropriate service- or agency-responsible agent. As a minimum requirement, shortfalls need to be shared with an IMDC-responsible agent for inclusion in overall requirements (i.e., EWIR) and costing algorithms with non-attribution to the SAP.

UNCLASSIFIED

Assessment Reports (STARs), and Information Support Plans (ISPs). When complete, the IMD Requirements Listing will be endorsed by the PM/CM/Lead and provided to the IMDC through the appropriate Service and/or Agency coordination hierarchies. PM should work with FIO/STILO/AIS personnel, if available. The IMDC staff is available to assist the program staff and/or service acquisition support staff to accomplish the LMDP. The PO will also work with the IC during their LMDP assessment process to clarify requirements and answer questions on parametric needs, systems of interest, and data delivery timelines. Programs will also identify non-DODIC IMD requirements by functional area for inclusion in the LMDP for risk assessment purposes.⁷

- b. Risk Assessment and Course of Action (COA) Development:** When PM/CM/Lead receives the completed LMDP back from IMDC, the PM/CM/Lead, will develop a risk assessment to define the impact of any IMD shortfalls (Potentially Available IMD). The Risk Assessment takes place after the IPCs' response to the initial IMD requirements with support from the IMDC, IMD producers, and the requirements community. Results of the risk assessment will be used to develop a recommended course of action, to include a funding strategy for development of Potentially Available IMD.

3.2 The Intelligence Mission Data Center (IMDC)

Per DoDD 5250.01, the IMDC shall "Facilitate and coordinate the assessment of LMDPs in support of the IMD producers and the acquisition process." The IMDC identifies the common IMD requirements across acquisition program efforts and serves as the focal point for IMD development, production, and sharing. The LMDP process is the primary means for the IMDC to accomplish these tasks.

LMDP Process: Work with the PO and /or AIS in developing the LMDP, ensuring the LMDP is complete and sufficient for the IMD producers to complete their assessments. The IMDC reviews the LMDP and the program documents and resolves questions on IMD dependencies that may not have been addressed. The IMDC ensures the PM has identified both threshold and objective requirements, timelines for their IMD needs, and specific formats⁸ required for the IMD. In later stages of the Acquisition Lifecycle, the IMDC will ensure that the IMD needs throughout the life-cycle have been addressed. At that point, the IMDC identifies the appropriate IMD-producer within the DoDIC and disseminates the LMDP in collaboration with the FIO/STILO/AIS personnel via COLISEUM or with NGA as required. The IMDC tracks the progress to ensure the program will have a completed LMDP returned to meet their timelines. When the IMDC receives the LMDP back from the producer, it ensures that the production center has adequately addressed the IMD production capabilities, shortfalls, associated costs and that the FAO has identified IMD opportunities for sharing among the Services and Agencies. The IMDC then provides the LMDP back to the program office for the risk assessment and COA development. The IMDC will also make completed LMDPs available on-line.

- b. LMDP Signature Authorities:** The LMDP is signed by a GS-15/O6 representative of each of the following: PO, relevant IMD producers, IMDC and, as appropriate, the Service

⁷ **Non-DODIC IMD** - Any IMD being produced by any government agency or contractor other than the DoD intelligence component. See Non-DODIC IMD Production Waiver Request in Appendix 1.

⁸ To be developed.

intelligence acquisition representative. Each signature indicates a contribution from that office—the PM identifies intelligence requirements; the IPC provides Available and Potentially Available IMD; and the IMDC validates the LMDP is complete.

3.3 The Intelligence Production Center (IPC)

The Intelligence Production Center (IPC) (e.g., NGA, NASIC, NGIC, ONI, MSIC, etc.), and other IMD production efforts (e.g., labs, warfare research center, and other organizations) role during the LMDP process is to provide IMD, level of data availability, and IMD production costing for potentially available IMD, acquisition and operational use (per DoDD 5250.01). The IPC will respond back to the PM/CM lead through the IMDC, which will consolidate and review the IPC responses.

LMDP Requirements Assessment:

- a. On receipt of an LMDP:** The IPC will conduct an assessment of the IMD requirements within its area of production responsibility. The requirements assessment will address the following:
 - i. Currently Available IMD: IMD that the IPC can provide with minimal additional level of effort.
 - ii. Potentially Available IMD: IMD that is currently unavailable, but the IPC can provide, given one or more of the following:
 - a. A re-prioritization of IMD production to meet the program's requirements schedule.
 - b. Additional funding and/or manpower for IMD production.
 - c. Application of a mature technology or reapplication of an existing technology to create a new collection capability. This means that the needed IMD can be produced given the time and resources to develop the new capability.
 - iii. Unobtainable IMD: IMD that the IC cannot provide for technical/scientific reasons or due to political sensitivities.
 - a. Development of an additional collection capability. This means that the needed IMD can be produced given the time and resources to develop an additional collection capability that requires a new technology to be matured. This means that the needed IMD will not be available in time for initial operational capability of the system given the time and resources to develop an additional collection capability.
 - b. Analytic methodology that does not currently exist and will not be available in time for initial operational capability of the system.
- b. Costing of Potentially Available IMD:** The IPC will produce cost estimates for the effort to obtain potentially available IMD in accordance with (IAW) the IMD Cost Methodology Guidebook, which can be found on the IMDC or DAU website. It can be found on the IMDC or DAU websites at:

SIPRNet: <http://intelshare.intelink.sgov.gov/sites/imdc/lmdpPublicShare/default.aspx>

or at **NIPRNet DAU:** <https://acc.dau.mil/CommunityBrowser.aspx?id=289687>

3.4 The IMD Functional Area Office (IFAO)

IFAO Management. IFAOs are the central organizations with enterprise responsibilities for specific IMD functional areas. The IFAOs assist the IMDC in identifying IMD opportunities for sharing among the services and agencies. This data sharing effort should lead to cost savings, streamlining schedule, and improved capabilities. The IFAOs will provide authoritative expertise for their areas, including knowledge of existing databases, standards,⁹ requirements, costing, and producers throughout DoD and IC. IFAOs are as follows:

- i. EWIR and C&P: Missile and Space Intelligence Center (MSIC), Office for Analytic Systems and EWIR Program Management Office
- ii. OOB: Defense Intelligence Agency, Modernized Integrated Database (MIDB) Program Office
- iii. GEOINT: National Geospatial-Intelligence Agency (NGA), Future Warfare Systems Division

4.0 LMDP Drafting Support Files

The LMDP Guidebook and supporting files (listed below) can be located on the Defense Acquisition University website:

<https://acc.dau.mil/CommunityBrowser.aspx?id=289687&lang=en-US>.

- LMDP Template
- IMD Costing Methodology Guidebook
- DoD Directive 5250.01, “Management of Intelligence Mission Data (IMD) in DoD Acquisition”

The LMDP main body template provides a format with paragraph titles and an explanation of what to include in each paragraph for the textual portion of the LMDP. The entire LMDP content should remain free of any source selection sensitive information, which should be incorporated by reference. The program office shall pay careful attention to classification of the LMDP and classify it accordingly as required. Because of classification and Essential Elements of Information, use the tables on the IMDC SIPRNet websites for LMDP creation since the LMDPs are transmitted back to the IMDC via SIPRNet or higher.

⁹ IMD requirements, standards will be developed in the future and described in an appendix to the document.

Attachment 1: LMDP Template

The LMDP Template is located at:

1. **NIPRNet:** <https://acc.dau.mil/CommunityBrowser.aspx?id=289687>
2. **SIPRNet:** <http://intelshare.intelink.sgov.gov/sites/imdc/lmdpPublicShare/default.aspx>

Contact the IMDC with any questions: IMDC_LMDP_support@dia.smil.mil

Appendix 1: LMDP Special Cases

1. LMDP Conditional Acceptance (CA)

Programs that are rapidly approaching a milestone decision in CY 2013 will be offered the Conditional Acceptance (CA). The CA is a transitional document to provide a grace period during the transition from the Lifecycle Signature Support Plan (LSSP) to the LMDP, while the IMDC stands up. The CA offering will expire at the end of CY 2013. Full LMDPs will be required for programs with acquisition events in 2014 and beyond. After finishing the milestone review, LMDPs should be written as soon as program IMD requirements are identified with the goal for starting an LMDP being at least 1 year to 180 days out from the DAB or MDR [Milestone (MS) A, B, C, and/or Full Rate Production-Decision Review (FRP-DR)], as applicable.

2. Data Item Description (DID) Production

Program offices, in coordination with the contracting officer, should ensure IMD produced by the system contractor is delivered to the government. Delivery of IMD should be properly reflected in Requests for Proposal and in final signed contracts by including appropriate clauses (Reference FAR and DFARS) and having correct language in the Statement of Work (e.g., “Any IMD collected or developed concurrent with this contract shall be delivered to the government.”). Program offices also ensure IMD are listed as a Contract Data Requirements List (CDRL)-deliverable as applicable. A draft DID is provided to facilitate compliance and enable sharing of non-proprietary IMD.

UNLIMITED RIGHTS for (IMD product title)

Contract No. (enter #)

Contractor Name: (enter name)

Contractor Address: (enter address)

Example text, “*The Government has unlimited rights to use, modify, reproduce, release, perform, display, or disclose this IMD (enter name) in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize other to do so in accordance with the above identified contract.*”

3. Non-DODIC Production Waivers:

DoDD 5250.01 requires all IMD to be produced by the DoD Intelligence Components (DODIC) unless a waiver is documented in an Acquisition Decision Memorandum (ADM) allowing IMD production by other sources. The status of the Non-DODIC IMD Production Waiver request will be posted on the IMDC SIPRNet SharePoint site located at:

<http://intelshare.intelink.sgov.gov/sites/imdc/lmdpPublicShare/default.aspx>

A Non-DoDIC Production Waiver will contain, at a minimum, the following elements:

- a. A summary of DODIC production capability relative to the required IMD, including Non-DODIC IMD cost and schedule estimates to provide the Potentially Available IMD.

UNCLASSIFIED

- b. A description of the proposed source of Non-DODIC IMD, including cost and schedule estimates. The cost estimates shall include appropriate costs for DODIC validation of the Non-DODIC IMD. The IMDC will work with the IMD producer to identify the cost.
- c. Justification for using the proposed Non-DODIC production source.
- d. Certification that the Non-DODIC produced IMD will become government data, be provided on a non-proprietary basis, be validated by the DODIC, and be produced using metadata and formats compatible with similar DODIC-produced IMD (with the goal of maximizing re-use of the IMD without cost.)
- e. Documentation of OUSD(I) coordination and MDA approval of the waiver.

4. LMDP Releaseability:

All LMDPs, with the exception of SAP/SAR-controlled access programs, will be made available to other programs for use as an example or to facilitate sharing between services, programs, and organizations. LMDPs will be posted to the SIPRNet Acquisition Information Repository (AIR), which is the common storage area for acquisition-related documents. A PO that does not want to share its LMDP must provide a justification to the IMDC and receive approval.

5. Special Access Programs (SAP):

Acquisition Programs that are SAP shall be coordinated at the appropriate level via a Special Access Request (SAR) to the appropriate service or agency-responsible agent. As a minimum requirement, shortfalls will be shared with an IMDC-responsible agent for inclusion in overall requirements (i.e., EWIR) and costing algorithms with non-attribution to the SAP.

Appendix 2: Glossary

Applies to all LMDP related documents and templates

Accuracy (as associated with GEOINT requirements): The degree of closeness of a measured or calculated quantity to its actual (true) value. Accuracy measures typically used with weapons and capabilities are:

- Linear Error (LE) - A one-dimensional error (such as an error in elevation) defined by the normal distribution function. Stated as a percentage of the probability that any point expressed as a function of a single linear component will be along the given line. Commonly used are Linear Standard Error or 1-sigma Error (68.27 percent), LE Probable (50 percent), and
- LE (90 percent) Linear Error at 90-Percent Probable (LE90) - Geospatial position vertical accuracy, expressed in feet or meters at a 90-percent probability, meaning that the true elevation will fall inside 2 horizontal planes separated by a distance of LE90 above and below the estimated point. (NGA Standard).
- Circular Error (CE) - An accuracy figure representing the stated percentage of probability that any point expressed as a function of two linear components (e.g., horizontal position) will be within the given circle. Commonly used are CE Probable (CEP) (50 percent), CE 1-sigma (39.35 percent).
- CE (90 percent) Circular Error at 90-Percent Probable (CE90) - Geospatial position horizontal accuracy, expressed in feet or meters at a 90-percent probability, meaning that the true point will fall inside a circle about the estimated point with a radius equal to CE90 (NGA Standard).
- Circular Error Probable (CEP) - A commonly used indicator of the delivery accuracy of a weapon system, used as a factor in determining probable damage to a target. The CEP is the radius of a circle within which half of a missile's projectiles are expected to fall.
- Circular Map Accuracy Standard (CMAS) - An accuracy figure representing the stated percentage of probability that all well-defined features fall within the circle area specified. Example: If the 90-percent CMAS for a map is 1 mm, then a map feature has a 90-percent chance of being within 1 mm of where it actually belongs on the map.
- Spherical Error (SE) - The radius of a sphere within which there is a specified probability of locating a point. Spherical error is the three-dimensional analog of circular error. Commonly used are Spherical Error Probable (50 percent), and Spherical Error (90 percent).
- The degree to which measured information matches true or accepted values. Accuracy is typically defined by a "root mean square (RMS) of errors" (NGA Standard).

Associate Programs: Individual acquisition programs that are associated and considered a component of a System of Systems (SoS) or Family of Systems (FoS) program, such that the SoS/FoS mission cannot be completed without the "associate program" (also called "component program").

Blue signatures: System associated with U.S. military systems.

Characteristics & Performance (C&P) Data: Developed from measurements and detailed analysis of all-source intelligence. C&P data provide descriptive characteristics to define the system, its capabilities, and its behaviors. Examples: Aircraft range, aircraft speed, aircraft flight characteristics, missile range, missile speed, missile flight characteristics, etc.

UNCLASSIFIED

Clutter Data: Man-made and/or natural features that can impact signal propagation and detection by reflection, diffraction, absorption, or scattering of the transmission waves.

Component Programs: See “Associate Programs.”

Confidence: A measure of how reliable a result, estimate, or conclusion is expressed as a term indicating the likelihood of the result being correct.

- Low Confidence - Information is scant, questionable, or fragmented, leading to difficulties in making “solid analytic inferences;” or is based on sources that may be problematic.
- Medium Confidence - Available information is susceptible to multiple interpretations, or there may be alternative views; or the information is “credible and plausible” but not sufficiently corroborated.
- High Confidence - Judgments are based on high-quality information, or the nature of the issue makes a solid judgment possible.

DODIC: The Department of Defense Intelligence Components: any intelligence component, including “any component of the Department of Defense that performs intelligence functions and is designated by the Secretary of Defense as an intelligence component of the Department of Defense.” [10 U.S.C. § 1614(2)(D)]. The DODIC shall produce all IMD required for IMD-dependent acquisition programs unless waivers are coordinated by the USD(I), approved by the milestone decision authority, and documented in an acquisition decision memorandum.

EWIR: Electronic Warfare Integrated Reprogramming is a systematic process designed to increase aircrew survivability and mission success while operating in an environment characterized by friendly, neutral, and hostile threat systems that use the electromagnetic (EM) spectrum. EWIR provides a capability to characterize the EM emissions of hostile and other systems, analyze and model their impact on operations, and to incorporate these characteristics to enable rapid detection, accurate identification, and appropriate response within the EM spectrum. EWIR functions within the scope of electronic warfare (EW).

EWIR Confidence Factor Assessments (CFA): CFAs reflect the analyst’s overall confidence in the data, not the source of the data, as follows:

CFA 1: High Confidence - Known with little uncertainty.

- Known directly from hard intelligence or exploitation.
- For example, the existence of an MTI unit may be notated with a Confidence 1 if a manufacturer’s brochure and exploitation provide evidence of its existence. A mature, stable system with years of ELINT may have Confidence 1 observable ranges.

CFA 2: Medium Confidence - Assessed with reasonable certainty.

- Derived from intelligence data with little uncertainty.
- For example, the assessment that a typical airborne intercept radar is a super heterodyne (without a reference directly stating the down conversion process) may be a Confidence 2.

CFA 3: Low Confidence - Assessed with significant assumptions.

- Derived from intelligence data of uncertain validity or estimated from consideration of system observables together with known emitter-design practices of country of origin.

UNCLASSIFIED

- For example, dozens of intercepts on an observable attribute may yield Confidence 3 limits.
- The calculated ERP given high-confidence gain and power values and estimated transmit line losses may be notated with a Confidence 3.
- ☐ 'UNK' entries get CFA of 3.

CFA 4: Poor Confidence - Assessed based on the laws of physics or comparisons with similar systems.

- Estimated based only on known-design practices with little or no intelligence basis; use of Level 4 indicates a technology assessment or best estimate based only on analyst's experience. Examples of CFA 4 circumstances:
 - Assessed observable ranges based on exploitation measured values,
 - Assessed observable limits based on a small number of intercepts,
 - Assessments based on similar systems,
 - Calculations using more than one low/poor confidence intermediate values,
 - Calculations based on multiple significant assumptions based on the laws of physics.

CFA 5: Automatic Calculations (no analyst review).

Family of Systems (FoS): A set or arrangement of independent systems that can be arranged or interconnected in various ways to provide different capabilities. The mix of systems can be tailored to provide desired capabilities, dependent on the situation. An example of an FoS would be an anti-submarine warfare FoS consisting of submarines, surface ships, aircraft, static and mobile sensor systems and additional systems. Although these systems can independently provide militarily useful capabilities, in collaboration they can more fully satisfy a more complex and challenging capability: to detect, localize, track, and engage submarines.

Fit Data: Information concerning the internal and external equipment associated with a particular platform. For the example of an aircraft, having knowledge of a specific grouping of avionics hardware and software, and how it works together and provides the "avionics fit" for that platform. Knowing the grouping (configuration) of the hardware and software helps to make the fit. Similarly, having knowledge of the different possible weapon / launcher / fuel-tank-load combinations on an aircraft contributes to the "weapons fit" for that platform.

Functional Area: Characteristics and performance (C&P), electronic warfare integrated reprogramming (EWIR), geo-spatial intelligence (GEOINT) order of battle (OOB), and signatures.

GEOINT: GEOINT is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence, and geospatial information.

Gray Signatures: System associated with non-hostile, non-US military users. Examples:

1. Countries/coalitions traditionally identified as US allies (UK, CAN, AUS, NATO, etc).
2. Countries/coalitions identified as "neutral" or "unknown" in their alliance with US.

Includes US systems sold to other countries through FMS or similar processes. (Literally, a "gray" area, where rules, responsibilities, and collection authorities require significant attention to law and policy detail.)

The Intelligence Production Center (IPC): IPCs (e.g., NGA, NASIC, NGIC, ONI, MSIC, etc.) and other IMD production efforts (e.g., labs, warfare research center, and other organizations)

UNCLASSIFIED

role during the LMDP process is to provide IMD, level of data availability, and IMD production costing for IMDC, acquisition and operational use (per DoDD 5250.01).

IMD Functional Area Office (IFAO): The IFAO was previously referred to as the Enterprise Management Office (EMO). IFAO's are the central organizations with enterprise responsibilities for the five specific IMD functional areas: characteristics and performance (C&P), electronic warfare integrated reprogramming (EWIR), GEOINT OOB, and signatures.

Intelligence Mission Data (IMD): Intelligence Mission Data is defined as IMD that provides essential data for building system models, developing algorithms, optimizing sensor design, system testing and evaluation, and validating sensor functionality. Programs dependent on IMD to satisfy their operational and system requirements are considered IMD dependent. "Machine to machine transfer database" - Chris Bannon, ONI.

IMD-Dependent System: Any acquisition program that will require IMD (e.g. programs that carry out combat identification, ISR, and targeting using, but are not limited to C&P, EWIR, GEOINT, OOB, and signatures.)

Intelligence Community: The Intelligence Community (IC) is a cooperative federation of 17 separate United States government agencies that works separately and together to conduct intelligence activities considered necessary for the conduct of foreign relations and national security of the United States. Member organizations of the IC include intelligence agencies, military intelligence, and civilian intelligence and analysis offices within federal executive departments. The IC is led by the Director of National Intelligence (DNI), who reports to the President of the United States.

Intelligence Certification Process: The Intelligence Certification Process provides review, coordination, and certification/endorsement functions in support of the Joint Capabilities Integration and Development System (JCIDS) process. These functions include intelligence supportability for intelligence certification and threat validation. All acquisition programs or capabilities that are expected to operate in a threat environment must be developed in accordance with the most current threat information. {Per Chapter 8 Defense Acquisition Guidebook}

LMDP Accomplishment: The LMDP is accomplished by the interaction of at least five entities: the Program Office (or function), the Intelligence Production Center, the Enterprise Management Office (e.g., governance structures for C&P, EWIR, GEOINT, OB), assigned Acquisition Intelligence personnel (FIO/STILO/Acquisition Intelligence Specialist/Analyst) and the IMDC.

Latency: For networked data, it is the time between a query and the results arriving at the screen, or the time between initiating a transaction that requires modification to one or more databases and completion of that modification. Data latency is typically expressed quantitatively (milliseconds, microseconds, etc.), or qualitatively as "real time," "near real time," etc. For signatures, the term typically refers to the currency of the information, or the rate of update (i.e., How old is this information? When was it last updated? How often should it be updated? etc.).

Measured Data: Information obtained from direct collection, or by trusted sources.

UNCLASSIFIED

Mission Data: Mission Data, as distinct from IMD, is data required for mission execution and is derived from all information sources. IMD is a subset of MD.

Non-DODIC IMD: Any IMD being produced by any government agency or contractor other than the DoD intelligence component.

Objective Value: The desired operational goal associated with a performance attribute beyond which any gain in utility does not warrant additional expenditure. The objective value is an operationally significant increment above the threshold. An objective value may be the same as the threshold when an operationally significant increment above the threshold is not significant or useful.

Order of Battle: Order of battle is the identification, command structure, strength, and disposition of personnel, equipment, and units of an armed force participating in field operations. Various abbreviations are in use, including OOB, O/B, or OB. An order of battle should be distinguished from a table of organization, the intended composition of a given unit or formation according to military doctrine, and it should suit its staff administration operations. As combat continually evolves throughout a campaign, orders of battle may be revised during the course of composing the commanders' after-action reports and/or other accounting methods (e.g., dispatches) as combat assessment is conducted.

Parametric Data: Directly measureable factors (such as frequency, pulse width, polarization, etc.) that help to define a system/waveform and determine its behavior. They are data elements that describe specific properties and timing. Parametric data can be expressed as a mean value, or as a range of values, to describe an operational capability of a system.

Precision: The degree to which further measurements or calculations show the same or similar results (i.e. how close the measured values are to each other).

Red Signatures: System associated with hostile, non-U.S. users.

Requirements Community: The Requirements Community includes all stakeholders in the acquisition community who provide direction, guidance, and/or supervision of all matters pertaining to the formulation, review, approval and execution of acquisition plans, policies, and programs. These investments include all major programs such as the F-35, AMDR, LSS, and munitions, as well as capability areas such as information technology, command and control, intelligence, surveillance, and reconnaissance (C4ISR) systems. This also includes formulation and execution in investment strategy to write requirements to acquire systems and support services to provide combat capability to joint warfighting commanders.

Signature: "Signature" covers the distinctive features of phenomena, equipment, or objects as they are sensed by the collection instrument(s). The signature is used to recognize the phenomenon (the equipment or object) once its distinctive features are detected.¹⁰

Standards and Formats: Standards and formats are required for consistency within the IC to process data so that all IC partners can exploit it. See Appendix 2 for standards and formats.

¹⁰ Interagency OPSEC Support Staff (IOSS) (May 1996), "Section 2, Intelligence Collection Activities and Disciplines", *Operations Security Intelligence Threat Handbook*, retrieved 2007-10-03

Synthetic Data: Information produced through interpolation/extrapolation of measured data, through M&S, or through other derivative methods (DS&TI, all-source assessments, etc.).

System of Systems (SoS): A set or arrangement of systems that results from independent systems integrated into a larger system that delivers unique capabilities. Both systems and SoS conform to the accepted definition of a system, in that each consists of parts, relationships, and a whole that is greater than the sum of its parts.

Threshold Value: A minimum acceptable operational value below which the utility of the system becomes questionable.

Validation: The Intelligence Mission Data Center (IMDC) “validates” that the Life-Cycle Mission Data Plan (LMDP) is complete and that the program’s mission data requirements have been identified, and that the DODIC has identified its capabilities or inability to meet these needs.

White Data: System associated with non-military, non-hostile users (i.e., U.S. non-military users, or non-U.S., non-military, non-hostile users).

Appendix 3: Acronyms

Applies to all LMDP related documents and templates

ACAT	Acquisition Category
AIR	Acquisition Information Repository
AIS	Acquisition Intelligence Specialist
CA	Conditional Acceptance
CDD	Capability Development Document
CDRL	Contract Data Requirements List
CJCS	Chairman of Joint Chiefs of Staff
COA	Course of Action
C&P	Characteristics and Performance
CPD	Capability Production Document
DAG	Defense Acquisition Guidebook
DCAPE	Director, Cost Analysis and Program Evaluation
DIA	Defense Intelligence Agency
DoDD	Department of Defense Directive
DoDIC	Department of Defense Intelligence Components
DOT&E	Director, Operational Test and Evaluation
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities
EWIR	Electronic Warfare Integrated Re-programming
FIO	Foreign Intelligence Officer
FoS	Family of Systems
FRP-DR	Full-Rate Production – Decision Review
GEOINT	Geo-Spatial Intelligence
IC	Intelligence Community

UNCLASSIFIED

ICD	Initial Capabilities Document
IMD	Intelligence Mission Data
IMDC	Intelligence Mission Data Center
IFAO	IMD Functional Area Office
IMDOB	Intelligence Mission Data Oversight Board
IMDSSG	Intelligence Mission Data Senior Steering Group
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
ISP	Information Support Plan
ISR	Intelligence, Surveillance, and Reconnaissance
JCIDS	Joint Capabilities and Integration Development System
JEONS	Joint Emergent Operational Needs
JROC	Joint Requirements Oversight Council
JUONS	Joint Urgent Operational Needs
KPP	Key Performance Parameters
KSA	Key System Attributes
LMDP	Life-cycle Mission Data Plan
MDA	Milestone Decision Authority
M&S	Modeling and Simulation
MOE	Measure of Effectiveness
MOP	Measure of Performance
MOS	Measure of Sustainability
MS A, B, C	Milestone A, B, C
MSIC	Missile and Space Intelligence Center
NASIC	National Air & Space Intelligence Center
NGA	National Geospatial-Intelligence Agency
NGIC	National Ground Intelligence Center

UNCLASSIFIED

NSA	National Security Agency
ODNI	Office of the Director, National Intelligence
ONI	Office of Naval Intelligence
OOB	Order of Battle
OPR	Office of Primary Responsibility
OUSD(AT&L)	Office of the Undersecretary of Defense for Acquisition, Technology and Logistics
PEO	Program Executive Office or Program Executive Officer
PM/CM	Program Managers/Capability Managers
RFP	Request for Proposal
SAP/SAR	Special Access Program/Special Access Required
SoS	System of Systems
STAR(s)	System Threat Assessment Report(s)
STILO	Scientific and Technical Intelligence Liaison Officer
TTP	Tactics, Techniques and Procedure(s)
TEMP	Test and Evaluation Master Plan
UAV	Unmanned Aerial Vehicle
USD(AT&L)	Undersecretary of Defense for Acquisition, Technology and Logistics
USD(I)	Undersecretary of Defense for Intelligence
USD(P)	Undersecretary of Defense for Policy
VV&A	Verification, Validation and Accreditation